HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P. O. Box 272400
Fort Collins, Colorado 80527-2400

PATENT APPLICATION

ATTORNEY DOCKET NO. 200312473-1

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Heiles et al.

Confirmation No.:

Application No.:

Examiner:

Filing Date:

Group Art Unit:

Title: PRINTHEAD ERROR COMPENSATION

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

This Information Disclosure Statement is submitted:

(X) under 37 CFR 1.97(b), or
(Within three months of filing national application; or date of entry of national application; or before mailing date of first office action on the merits; whichever occurs last)

( ) under 37 CFR 1.97(c) together with either a:
( ) Statement under 37 CFR 1.97(e), or
( ) a $180.00 fee under 37 CFR 1.17(p), or
(After the CFR 1.97 (b) time period, but before final action or notice of allowance, whichever occurs first)

( ) under 37 CFR 1.97 (d) together with a:
( ) Statement under 37 CFR 1.97(e)(1) or (2), and
( ) a $180.00 fee set forth in 37 CFR 1.17(p).
(Filed after final action, a notice of allowance, on or before payment of the issue fee)

Please charge to Deposit Account **08-2025** the sum of $0.00 . At any time during the pendency of this application, please charge any fees required or credit any overpayment to Deposit Account **08-2025** pursuant to 37 CFR 1.25.

(X) Applicant(s) submit herewith Form PTO 1449 - Information Disclosure Statement together with any required copies of patents, publications or other information of which applicant(s) are aware, which applicant(s) believe(s) may be material to the examination of this application and for which there may be a duty to disclose in accordance with 37 CFR 1.56.

(X) A concise explanation of the relevance of foreign language patents, foreign language publications and other foreign language information listed on PTO Form 1449, as presently understood by the individuals(s) designated in 37 CFR 1.56 (c) most knowledgeable about the content is given on the attached sheet, or where a foreign language patent is cited in a search report or other action by a foreign patent office in a counterpart foreign application, an English language version of the search report or action which indicates the degree of relevance found by the foreign office is listed on form PTO 1449 and is enclosed herewith.

It is requested that the information disclosed herein be made of record in this application.

"Express Mail" label no. **EV 431601859 US**

Date of Deposit **4/21/2004**

I hereby certify that this is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to: Commissioner for Patents, Alexandria, VA 22313-1450.

By Carolyn Simpson

Typed Name: **Carolyn Simpson**

Respectfully submitted,

Heiles et al.

By Todd A. Rathe

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Attorney/Agent for Applicant(s)
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Date: **4/21/2004**

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CONCISE EXPLANATION OF RELEVANCE OF DOCUMENTS NOT IN THE ENGLISH LANGUAGE

JP 2001-105577

PROBLEM TO BE SOLVED: To provide a method for aligning print position of a plurality of print heads in a printer easily with high accuracy.

SOLUTION: At the time of complementary print with a plurality of print heads, a plurality of patterns are printed while shifting the dot formation timing of the other head by a specified amount, at a time, from that of one reference head. These patterns have area factors of dots formed by that printer dependent on the shift. When the plurality of patterns are read out optically as an average density, optical reading conditions (color of a color filter with respect to a light receiving section) are selected appropriately depending on the color formed by the plurality of heads. Consequently, reading accuracy is enhanced and a timing corresponding to the highest average density can be set as print position aligning conditions.

JP 2000-127375

PROBLEM TO BE SOLVED: To ensure optimal alignment of recording liquid and record processing liquid by aligning the recording liquid and the colorless transparent record processing liquid based on the density measured for a plurality of patterns of different density.

SOLUTION: A print alignment pattern is formed by performing printing with a plurality of points while varying the relative print position between a blur pattern and a print of processing liquid. As the shift from optimal print position alignment conditions increases, contact amount and position is varied between the print of pattern and the print of processing liquid, i.e., between a recording liquid and a record processing liquid, thus varying the state of blur between the recording liquids. Consequently, the density itself at a print section is varied depending on the contacting state of the recording liquid and the record processing liquid. Since a decision can be made whether the print position is optimal nor not from the density at the print section using the print alignment pattern, optimal print alignment conditions between the recording liquid and the record processing liquid can be obtained from the density at a specified area.

JP 2000-127369

PROBLEM TO BE SOLVED: To obtain a dot alignment method excellent in operability by detecting the optical characteristics of a printed image and calculating optimal dot alignment adjusting conditions from the detection results thereby setting the adjusting conditions automatically.

SOLUTION: In bidirection print performing mutual adjustment of dot forming position, print is performed at same position on a print medium 8 in both going and returning strokes. Printing is performed under a plurality of conditions by varying the alignment conditions of mutual dot forming position between first and second prints. The density is read out using an optical sensor 30 mounted on a carriage, or the like. Best alignment conditions of the first and second prints are then determined from the relative relation of the density. More specifically, proximity characteristics of density are calculated for the conditions of hitting position from relative relation of the conditions of hitting position and the density and then optimal conditions of hitting position are determined from the proximity characteristics.

FORM PTO-1449 LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	ATTY. DOCKET NO. 200312473-1	APPLICATION NO.	CONFIRMATION NO.
	APPLICANT Heiles et al.		
	FILING DATE	GROUP	

REFERENCE DESIGNATION **U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	PUBLICATION DATE	NAME	Pages, Columns, Lines Where Relevant Passages or Figures Appear
	1A	6,582,052 B2	06/24/2003	Sarmast et al.	
	1B	6,554,390 B2	04/29/2003	Arquilevich et al.	
	1C	6,554,388 B1	04/29/2003	Wong et al.	
	1D	6,547,360 B2	04/15/2003	Takahashi et al.	
	1E	6,532,026 B2	03/11/2003	Takahashi et al.	
	1F	6,474,767 B1	11/05/2002	Teshigawara et al.	
	1G	6,454,390 B1	09/24/2002	Takahashi et al.	
	1H	6,450,607 B1	09/17/2002	Bolash et al.	
	1I	6,416,151 B1	07/09/2002	Otsuka et al.	
	1J	6,390,587 B1	05/21/2002	Subirada	
	1K	6,347,856 B1	02/19/2002	Arquilevich et al.	

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	PUBLICATION DATE	NAME OF PATENTEE OR APPLICANT	Pages/Columns/Lines Where Relevant Passages/Figures Appear	Check if Translation attached
	1L	2001-105577	04/17/2001	Nishigori et al.		
	1M	2000-127375	05/09/2000	Chikuma et al.		
	1N	2000-127369	05/09/2000	Teshigahara et al.		
	1O	0 955 177 A2	11/10/1999	Noyes et al.		X
	1P	0 947 332 A2	10/06/1999	Otsuka et al.		

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

	1Q	British Search Report for Application No. GB 0220967.4 dated 10/15/02, 3 pages.
	1R	
	1S	

EXAMINER	DATE CONSIDERED

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REFERENCE DESIGNATION **U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	PUBLICATION DATE	NAME	Pages, Columns, Lines Where Relevant Passages or Figures Appear
	2A	6,297,888 B1	10/02/2001	Noyes et al.	
	2B	6,257,143 B1	07/10/2001	Iwasaki et al.	
	2C	6,198,549 B1	03/06/2001	Decker et al.	
	2D	6,161,914	12/19/2000	Haselby	
	2E	6,109,722	08/29/2000	Underwood et al.	
	2F	6,076,915	06/20/2000	Gast et al.	
	2G	6,000,776	12/14/1999	Suzuki et al.	
	2H	5,451,990	09/19/1995	Sorenson et al.	
	2I	5,448,269	09/05/1995	Beauchamp et al.	
	2J	5,404,020	04/04/1995	Cobbs	
	2K	5,353,052	10/04/1994	Suzuki et al.	

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	PUBLICATION DATE	NAME OF PATENTEE OR APPLICANT	Pages/Columns/Lines Where Relevant Passages/Figures Appear	Check if Translation attached
	2L					
	2M					
	2N					
	2O					
	2P					

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

	2Q	
	2R	
	2S	

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EXAMINER INITIAL		DOCUMENT NUMBER	PUBLICATION DATE	NAME	Pages, Columns, Lines Where Relevant Passages or Figures Appear
	3A	5,297,017	03/22/1994	Haselby et al.	
	3B	5,289,208	02/22/1994	Haselby	
	3C	5,250,956	10/05/1993	Haselby et al.	
	3D	5,189,521	02/23/1993	Ohtsubo et al.	
	3E	5,172,190	12/15/1992	Kaiser	
	3F	2003/0058295	03/27/2003	Heiles et al.	
	3G	2002/0126171	09/12/2002	Subirada et al.	
	3H	2002/0101469	08/01/2002	Wade et al.	
	3I	6,357,850 B1	03/19/2002	Liu	
	3J	6,353,481 B1	03/05/2002	Lee	
	3K	6,196,652 B1	03/06/2001	Subirada et al.	

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	3L					
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	3P					

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

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EXAMINER INITIAL		DOCUMENT NUMBER	PUBLICATION DATE	NAME	Pages, Columns, Lines Where Relevant Passages or Figures Appear
	4A	5,774,140	06/30/1998	English	
	4B				
	4C				
	4D				
	4E				
	4F				
	4G				
	4H				
	4I				
	4J				
	4K				

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	4L					
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	4N					
	4O					
	4P					

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	4Q	
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	4S	

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